

MALARINA, A NEW SPIDER GENUS (ARANEAE: AMAUROBIOIDEA: KABABININAE) FROM THE WET TROPICS OF QUEENSLAND, AUSTRALIA

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Four species of *Malarina* gen. nov. are described indicating the local endemism of species in North Queensland. These are *M. monteithi*, *M. masseyensis*, *M. collina* and *M. cardwell*. A cladistic analysis suggests that the Kababininae form a well supported monophyletic group though its placement in a family remains problematical. □ *Malarina*, Araneae, Kababininae, spider, Queensland.

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Malarina is the third genus to be described in the Kababininae, the others being *Kabahina* Davies, 1995 and *Carbinea* Davies, 1999. For nomenclatural purposes Davies is designated the author of this new genus and its species' names.

METHODS

All the spiders are from rainforests in the Wet Tropics region of North Queensland between latitudes 17°16' and 18°36'S. Collection methods include litter-sieving followed by heat extraction in funnels, pit-fall collection, pyrethrum spraying of tree-trunks and fallen logs, hand collecting from under logs in daylight and night collecting. Co-ordinates are given in square brackets when these are not given in the original data. Measurements are in millimetres. Notation of spines follows Platnick & Shadab (1975). The illustrations were drawn with the aid of a camera lucida; the left male palp is illustrated. All material is lodged in the Queensland Museum (QM).

Table 1 lists anatomical abbreviations used in the text and in Table 3; abbreviations on illustrations are explained in the legends to figures. Collectors: DC, D. Cook; DY, D. Yeates; GBM, G.B. Monteith; GT, G. Thompson; HJ, H. Janetzki; RR, R. Raven; SH, S. Hamlet; VED, V.E. Davies.

SYSTEMATICS

KABABININAE

DIAGNOSIS. Epigynum with medial atrium (previously referred to as 'fossa'), which is wider than long; spermathecae posterior or lateral to atrium. Male palp with rounded tegulum with prolateral groove; the course of sperm duct

showing clearly. Membraneous conductor; median apophysis absent. Tibial apophysis with ventral and dorso-retrolateral branches. Posterior spinnerets long with slender terminal segment (Fig. 1F).

DESCRIPTION. Three clawed. Carapace highest in foveal region (Fig. 1B); posterior eye row straight or slightly recurved; AME reduced (Fig. 1C). Chelicera with two retromarginal and two promarginal teeth (Fig. 1E); prolateral filamentous seta at base of fang longer than other setae. Labium about as wide as long; sternum pointed posteriorly (Fig. 1D). Legs 1423; feathery hairs, ridged cuticle. Tarsal trichobothria in a single line increasing in length distally; bothrium collariform. Tarsal organ slit-like broadening distally. Male palpal embolus with or without proximal embolic apophysis. Cribellum (two fields) present or absent in females, absent in males; proximal calamistrum with one row of setae; large broad colulus present when cribellum is absent. Two major ampullate gland spigots of unequal size on female ALS, one and a nubbin in male.

Malarina gen. nov.

ETYMOLOGY. Derived from the Aboriginal word, *malar*, meaning spider's web in the Dyirbal language of North Queensland.

TYPE SPECIES. *M. monteithi*.

DIAGNOSIS. Cribellate spider (cf. *Carbinea*) with paracribellar spigots on female PMS. Epigynum having a posterior knob and narrow postero-lateral insemination ducts (cf. *Kabahina* which lacks the well-marked epigynal knob and has wide anterior insemination ducts). Embolus

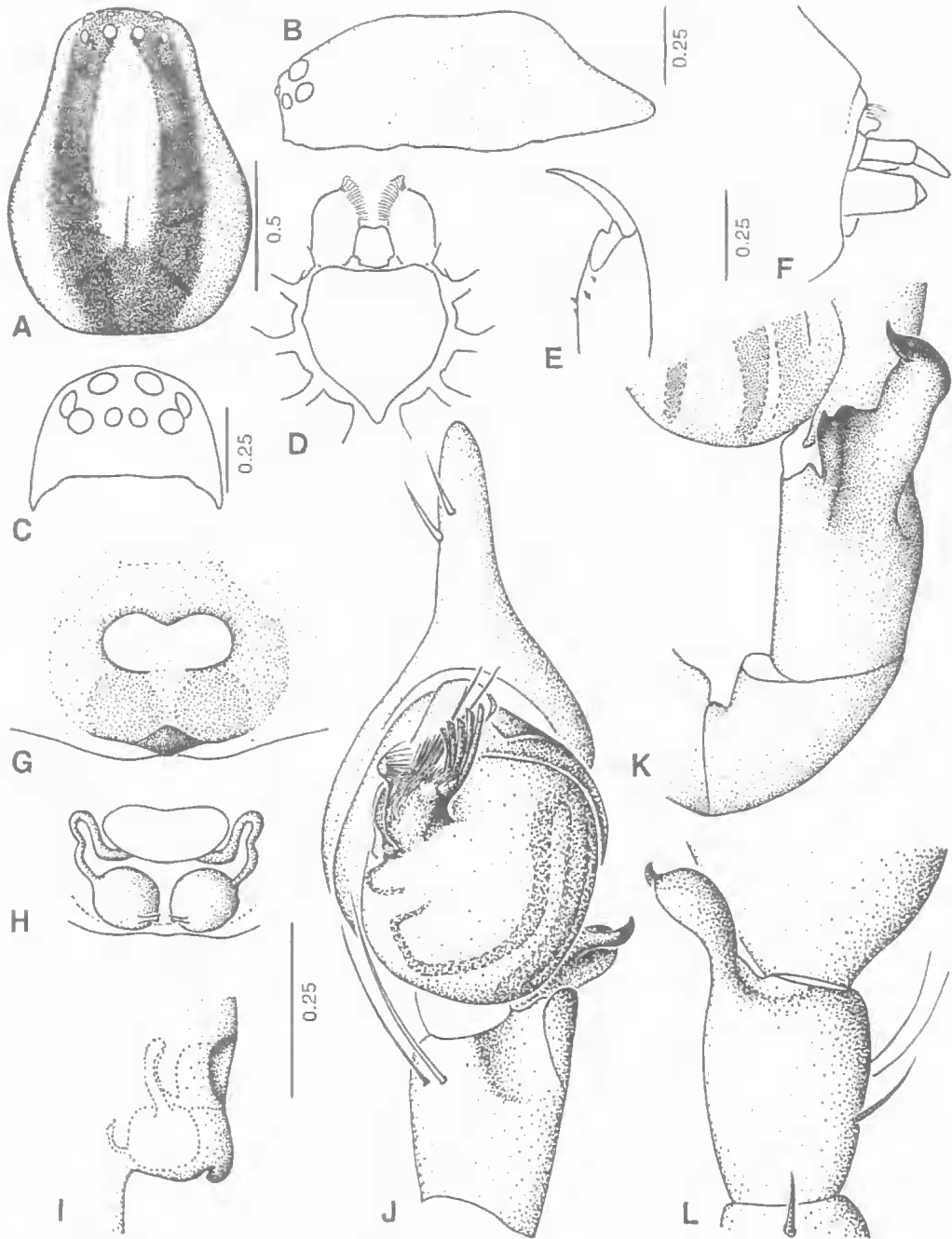


FIG. 1. A-L, *Malarina monteithi* sp. nov. A-I, ♀; A-C, carapace (dorsal, lateral, frontal); D, endites and sternum; E, chelicera; F, spinnerets (lateral); G-I, epigynum (ventral, dorsal, lateral). J-L, ♂; J, palp (ventral); K, L, tibial apophysis (retrolateral, dorsal).

and conductor arising antero-ventrally on tegulum (Fig. 5A); the embolus having an elaborate embolic apophysis like *Carbinea* but here it is unbranched. Male palpal tibia with 2-4

long ventral setae reaching about half way up cymbium (Fig. 1J) and a small sub-central prolatero-dorsal spine (Fig. 1L); the tibial apophysis is dorso-retrolateral.

TABLE 1. List of anatomical abbreviations.

AL	abdomen length
ALE	anterior lateral eyes
ALS	anterior lateral spinnerets
AME	anterior median eyes
APOPH	apophysis
AW	abdomen width
CAL	calamistrum
CB	cymbium
CH	chelicerai
CL	carapace length
CR	cribellum
CW	carapace width
E	embolic
EPIG	epigynal
ID	insemination duct
MAP	major ampullate spigots
MT	metatarsal
PCR	paracribellar spigots
PLD	prolaterodorsal
PLE	posterior lateral eyes
PLS	posterior lateral spinnerets
PME	posterior median eyes
PMS	posterior median spinnerets
RTA	retrolateral tibial apophysis
T	tarsal
TRICH	trichobothria

***Malarina monteithi* sp. nov.**
(Figs 1A-L, 2A,B, 6; Table 2)

ETYMOLOGY. For Dr GB. Monteith, entomologist, who has collected widely in the tropics of N Queensland.

MATERIAL. HOLOTYPE: ♀, Malanda Falls, 17°21'S, 145°35'E, N Qld, 750m, pyrethrum spray logs and trees, 31 Dec. 1989, GBM (QM S35253). PARATYPES: N Qld, 2 ♂, same data as holotype (S35254); ♀, 2 ♂, Millaa Millaa Falls, 17°28'S, 145°36'E, 800m, sieved litter, 17 May 1995, GBM (S35255); ♀, The Crater Nat. Park, 17°26'S, 145°29'E, 950m, pyrethrum logs, 28 Dec. 1989, GBM (S 35256); ♂, 3 ♀, Maalan State Forest (17°35'S, 145°35'E) in and under logs, 20-24 April 1978, VED, RR (S35257); ♀, Majors Mtn (17°38'S, 145°32'E) same data (S35258); ♀, Mt Father Clancy, Maalan, litter, 21 April 1978, RR (S35259); ♀, Ravenshoe, 17°39'S, 145°30'E, 920m, pitfall, 1 Dec. 1997-5 Feb. 1998, GBM, DC (S39202); ♂, Red Rd turnoff, 17°49'S, 145°33'E, Tully Falls Rd, pitfall, 8 Dec. 1989-5 Jan. 1990, GBM, GT, HJ (S35263).

DIAGNOSIS. Small (2.8-3.6) cribellate spiders; proximal calamistrum. The insemination ducts are simple. The embolic apophysis has two long setae extending beyond the rest (Fig. 2B).

DESCRIPTION. *Female*. CL 1.4, CW 1.1, AL 1.7, AW 1.2. Carapace with two dark longitudinal bands (Fig. 1A); highest at fovea. Viewed from top, eye rows straight. Ratio of AME:ALE: PME:PLE is 6:10:10:10. Legs 1423 (Table 2),

TABLE 2. Palp and leg measurements (mm) of ♀ (♂) *Malarina monteithi* sp. nov.

	Femur	Patella/ Tibia	Metatarsus	Tarsus	Total
Palp	0.6 (0.8)	0.6 (0.9)	-	0.5 (0.9)	1.7 (2.6)
Leg I	1.5 (1.8)	2.0 (2.3)	1.4 (1.9)	0.9 (1.2)	5.8 (7.2)
II	1.3 (1.5)	1.6 (1.8)	1.1 (1.4)	0.7 (0.9)	4.7 (5.6)
III	1.1 (1.4)	1.4 (1.5)	1.1 (1.3)	0.7 (0.7)	4.3 (4.9)
IV	1.5 (1.8)	1.9 (2.2)	1.5 (1.9)	0.8 (1.0)	5.7 (6.9)

banded. Notation of spines: Femora, I, D010, P010; II, D110, P001; III, D100, P001; IV, D110, P001, R001. Patellae, I, D001; II, D100; III, D001; IV, 001. Tibiae: I, V020; II, V010; III, D100, P001, R011; IV, D100, P011, V110, R011. Metatarsi, all spined with a distal whorl of 4-5. Epigynum (Figs 1G-I) short insemination ducts with anterior loop to spermathecae. These are large, together exceeding the width of the atrium. Cribellum with two fields; ALS with two major ampullate spigots and about 20 piriform spigots and some tartipores; PMS with an anterior minor ampullate spigot, and about 12 other spigots – two cylindrical spigots (mesal and posterior), four smaller paracribellar spigots with strobilate shafts and about six aciniform spigots. PLS with spigots of two sizes. Females varied in length from 2.8-3.6.

Male. CL 1.5, CL 1.2, AL 1.7, AW 1.1. Coloration and eyes like female. Legs 1423 (Table 2). Notation of spines: Femora, I, D110, P010; II, D110, P001, R001; III, D110, P001, R011; IV, D100, P001, R001. Patellae, I, D001; III, D001; IV, D001. Tibiae, I, D100, P010, V020, R001; II, D001, P011, V020, R001; III, D101, P011, V111, R011; IV, D101, P011, V111, R011. Metatarsi spined, with distal whorl 4-5. Male palp (Fig. 1J-L), sperm duct looping over retrolateral tegulum and forward again to base of embolus. Embolic apophysis fringed with a prolateral cluster of hair-like setae and five plate-like setae terminally (Fig. 2A,B). Under (strictly dorsal to) these there is also a row of straight setae, two of which are longer than the rest and protrude beyond them.

DISTRIBUTION. Collected from sites on the Atherton Tableland (Fig. 6).

***Malarina masseyensis* sp. nov.**
(Figs 2C,D, 3A-F, 6)

ETYMOLOGY. From the type locality, Massey Range.

MATERIAL. HOLOTYPE: ♀, Massey Range, 17°16'S, 145°49'E, 1250m, sieved litter, 10 Oct. 1991, GBM, HJ (QM S35260). PARATYPES: ♂, ♀, same data as holotype

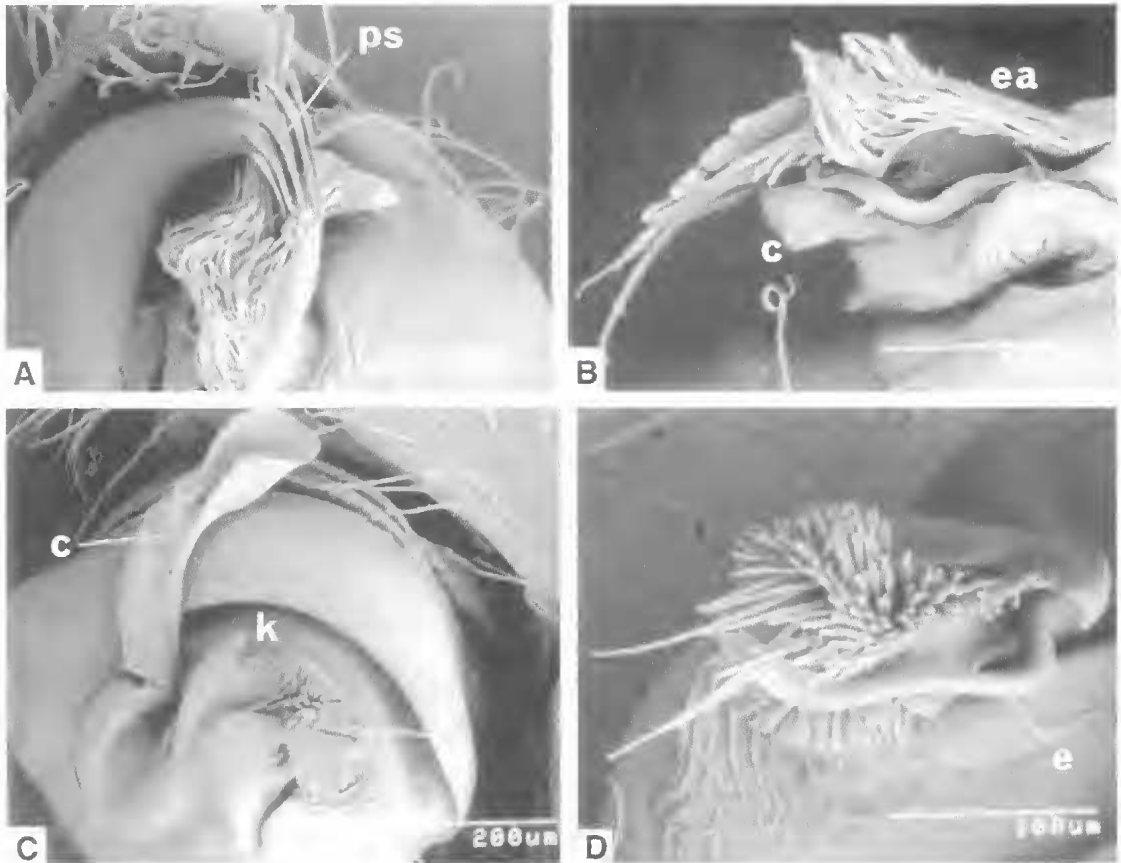


FIG. 2. A-D, ♂ *Malarina* spp.nov. embolic region of ♂ palpus. A, B, *M. monteithi* (ventral, prolateral); C, D, *M. masseyensis* sp.nov. (ventral, prolateral). c = conductor, e = embolus, ea = embolic apophysis, k = keel, ps = plate-like setae.

(S39185); ♀, Massey Range, 4km W of Centre, Bellenden Ker, 1250m, 9-11 Oct. 1991, GBM, HJ, DC (S35261); ♀, Bellenden Ker Range Summit, 17°16'S, 145°51'E, 1560m, in litter, 28 Oct. 1983, GBM, DY, GT (S35294); ♀, Bellenden Ker, Cable Tower 3, 1054m, under logs, 17-24 Oct. 1981, Earthwatch/QM, (S35295); ♂, Bellenden Ker Range, pitfall trap, 500m, 17-24 Oct. 1981, Earthwatch/QM (S 39186).

DIAGNOSIS. Larger spider (♀'s 3.9-4.7) than *M. monteithi*. Epigynum with simple insemination ducts; spermathecae together not exceeding the width of atrium (cf. *M. monteithi*). Palpal tibia with two large distal prolaterodorsal spines (cf. *M. monteithi*) as well as the sub-central spine.

DESCRIPTION. *Female.* CL 2.1, CW 1.5, AL 2.3, AW 1.3. Carapace without dark longitudinal bands. Eyes similar to *M. monteithi*. Legs 1423: I, 8.6; II, 6.7; III, 6.3; IV, 8.1, not markedly banded. Epigynum (Fig. 3A-C) with simple insemination

ducts with a transverse loop before entering spermathecae. Length 3.9-4.7.

Male. CL 1.9, CW 1.2, AL 2.0, AW 1.3. Legs: I, 9.1; II, 7.0; III, 6.3; IV, 8.6. Palp (Fig. 3D-F): large conductor; embolic apophysis curves strongly with marked keel; plate-like setae absent (Fig. 2C,D). Palpal tibia with two stout prolaterodorsal spines distally (Fig. 3F). Length 3.2-3.9.

DISTRIBUTION. Collected from sites on the Bellenden Ker/Massey Range (Fig. 6).

***Malarina collina* sp.nov.**
(Figs 4A-D, 5A,B, 6)

ETYMOLOGY. Latin *collis*, a hill, referring to the location.

MATERIAL. HOLOTYPE: ♀, Palmerston Nat. Park (17°34'S, 145°41'E) under logs, July 1992, J. Wunderlich (QM S35262). PARATYPES: 2♂, 2♀, same data as holotype (S39187); ♂, Upper Boulder Ck, 8km N. Tully, 17°50'S, 145°54'E, 250m, pitfalls, 4-7 Dec. 1989, GBM,

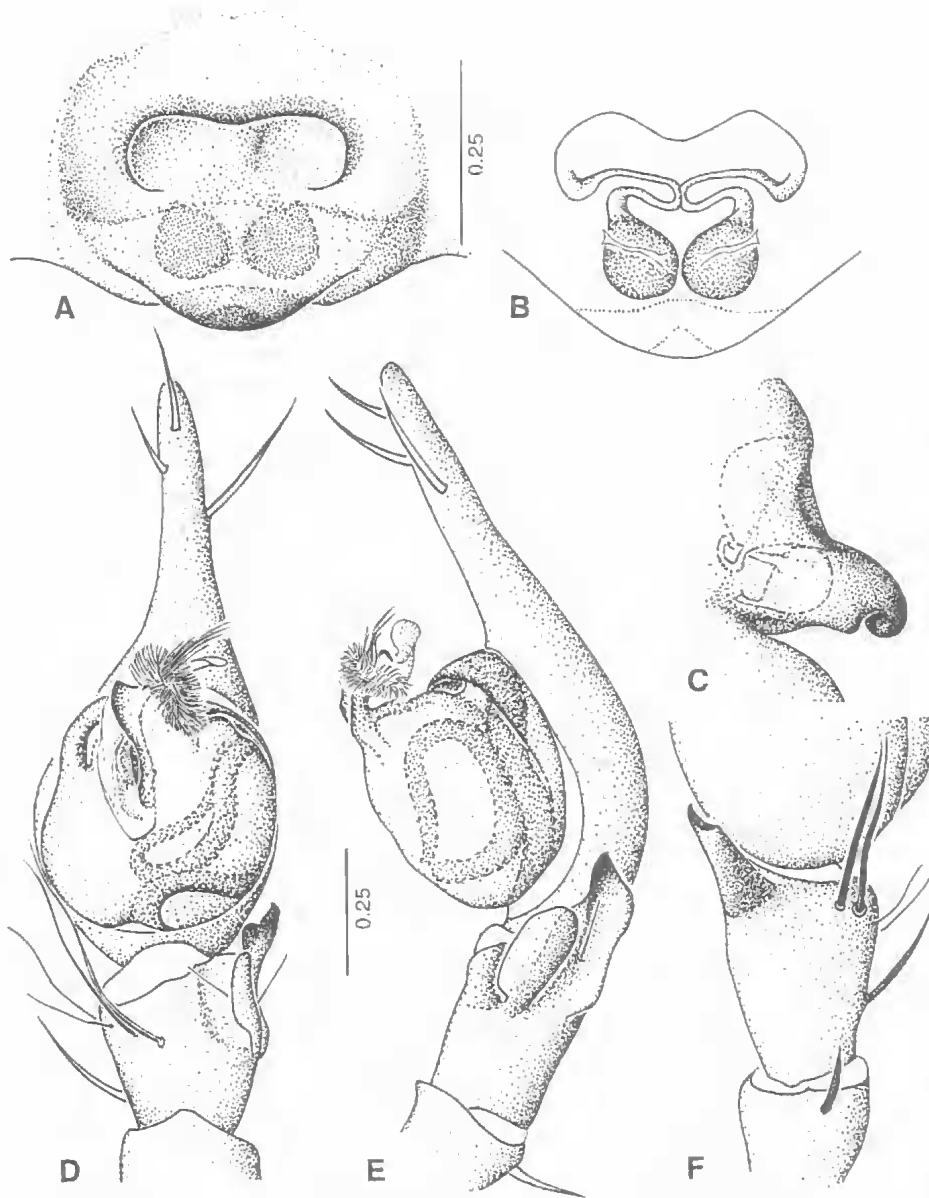


FIG. 3. A-F, *Malarina masseyensis*. A-C, ♀ epigynum (ventral, dorsal, lateral); D-F, ♂ palpus; D, E (ventral, retrolateral); F, tibial apophysis (dorsal).

GT, HJ (S35264); ♂, Boulder Ck via Tully. 17°50'S, 145°54'E, 650m, sieved litter, 27 Oct. 1983, GBM, DY, GT (S35265); ♀, same data (S39188).

DIAGNOSIS. Small spiders (♀'s 2.4-3.6). Insemination ducts coiled (cf. *M. monteithi*, *M. masseyensis*). Tibial apophysis shorter and broader than *M. monteithi* (Fig. 4D). All setae on embolic apophysis about same length (cf. *M.*

monteithi). Without two long prolaterodorsal spines on palpal tibia (cf. *M. masseyensis*).

DESCRIPTION. *Female.* CL 1.5, CW 1.1, AL 1.8, AW 1.1. Legs, I, 6.7; II, 5.3; III, 4.7; IV, 6.4. Epigynum (Fig. 4A-C) with coiled insemination ducts. Length 2.4-3.6

Male. CL 1.5, CW 1.1, AL 1.4, AW 1.0. Legs, I, 6.5; II, 5.1; III, 4.5; IV, 6.4. Palp (Figs 4D, 5A,B),

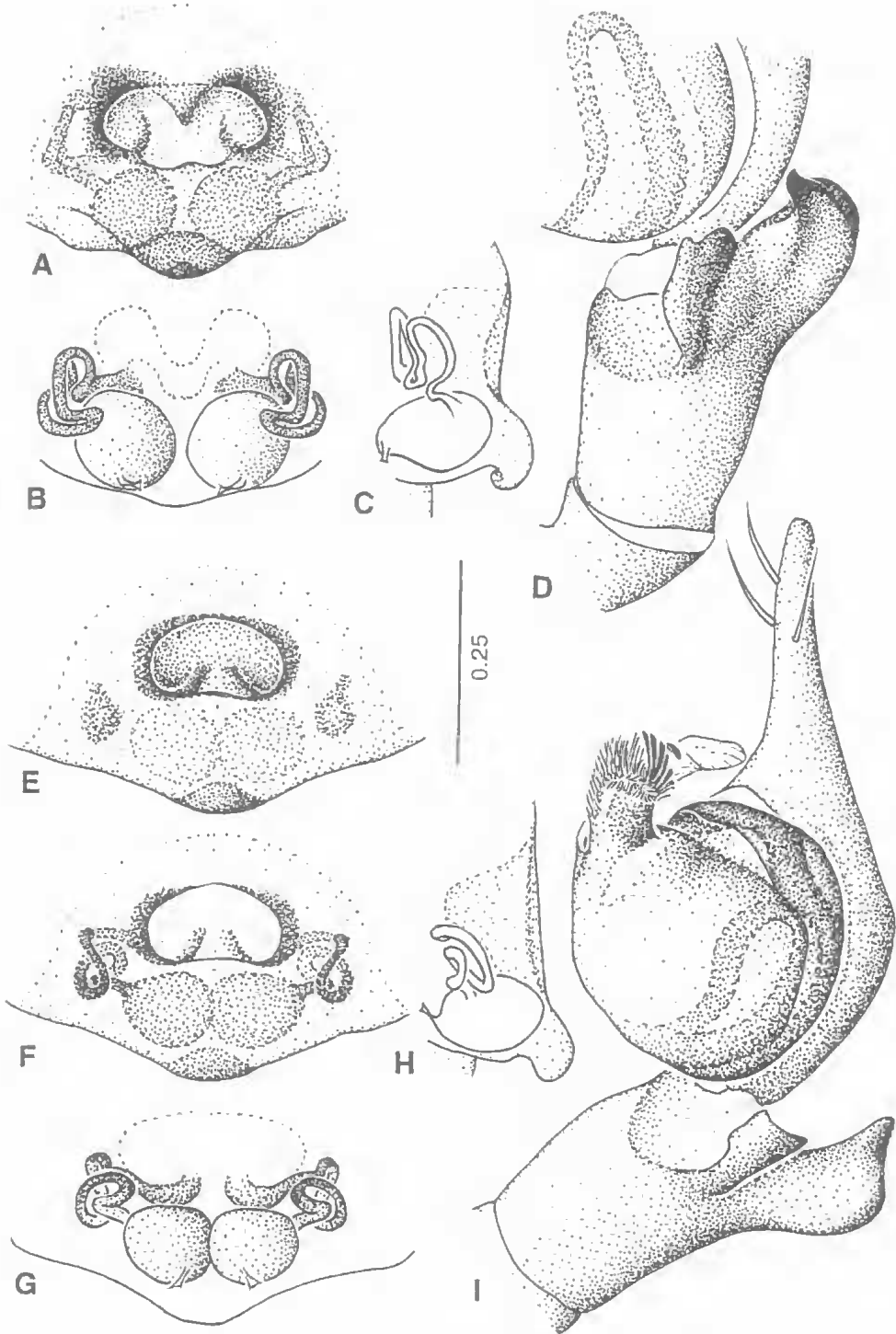


FIG. 4. A-I, *Malarina* spp. nov. A-D, *M. collina* sp. nov.; A-C, ♀, epigynum (ventral, dorsal, lateral); D, ♂ tibial apophysis. E-I, *M. cardwell* sp. nov.; E-H, epigynum (ventral, ventral cleared, dorsal, lateral); I, ♂ palp (ventral).

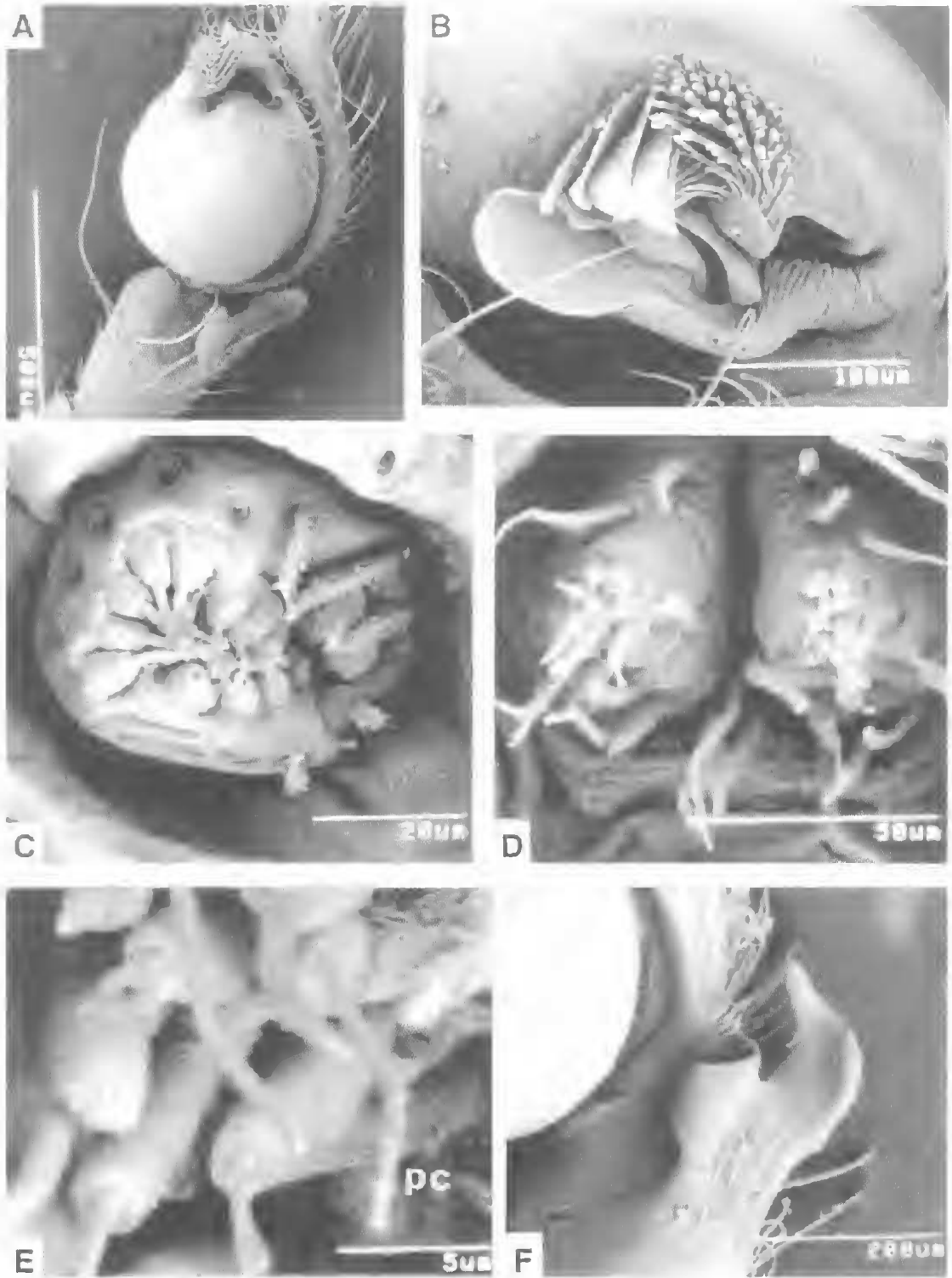


FIG. 5. A-F, *Malarina* spp. A, B, *M. collina* ♂; A, ♂ palp; B, embolic region (prolateral). C-F, *M. cardwell*; C-E, ♀ spigots; C, ALS (right); D, PMS; E, paracribellar spigots (pc) on PMS. F, ♂ palp, tibial apophysis.

TABLE 3. Characters and character states. * Multi-state character treated as unordered.

1. AME: as large or larger than ALE (0); smaller (1)
2. Retromarginal CH teeth: 2+ (0); 2 (1); 1 (2); 0 (3)
3. Promarginal CH teeth: 3+ (0); 3 (1); 2 (2); 0 (3)
4. Long prolateral seta at base of fang: absent (0); present (1)
5. Large frontal CH seta: absent (0); present (1)
6. CH lamina: absent (0); present (1)
7. Foveal area highest: absent (0); present (1)
8. ♀ leg I: shorter than leg IV (0); equal to or longer than leg IV (1)
9. Stridulatory ridges on ♂ coxa I: absent (0); present (1)
10. Enlarged ventral spines on tibia and MT I, II: absent (0); present (1)
11. Feathery hairs: absent (0); present (1)
12. MT preening comb: absent (0); present (1)
13. MT TRICH: 2+ (0); 1 (1)
14. T TRICH: 0 (0); 2+ (1); double row (2)
15. T rod: absent (0); present (1)
16. CR spinning fields: 2 (0); 1 (1); absent (2)
17.* CR spigots: absent (0); longitudinally ribbed (1); annulate (2)
18.* CAL: absent (0); proximal (1); medial (2)
19. MAP ♀ ALS: 2 (0); 1 and nubbin (1); 1 (2)
20. MAP ♀ ALS: mesal (0); anterior (1)
21. PCR ♀ PMS: one shaft per base (0); more than one shaft (1); absent (2)
22. EPIG gonopores: absent (0); present (1)
23. Medial EPIG atrium: absent (0); present (1)
24. ID: absent (0); simple (1); loosely coiled (2); tightly coiled (3)
25.* Posterior EPIG scape: absent (0); short (1); medium (2); long (3); small knob (4)
26. EPIG acellular lateral projections: absent (0); present (1)
27. E direction: straight (0); clockwise (1); anti-clockwise (2)
28. Proximal E APOPH: absent (0); unbranched (1); branched (2)
29. E APOPH 2-3 long setae: absent (0); present (1)
30.* E APOPH plate-like setae: absent (0); small (1); large (2)
31. PLD setae E APOPH: absent (0); present (1)
32. PalE process: present (0); absent (1)
33.* Conductor: absent (0); rounded (1); large T-shaped (2); s-shaped - falciform (3)
34. 2 ⁰ conductor: absent (0); present (1)
35. Median APOPH: absent (0); present (1)
36. Orientation of CB to bulb: dorsal (0); mesal (1)
37. Paracymbium: absent (0); present (1)
38. RTA to CB length: absent (0); quarter or less (1); third (2); half (3); more than half (4)
39. RTA dorsal branch: absent (0); present (1)
40. RTA lateral edge: straight (0); infurled (1)
41. Palpal tibia with 2 stout dorsal spines: absent (0); present (1)
42. Palpal patellar APOPH: absent (0); present (1)

all setae on embolic apophysis about same length. Broad colulus. ALS with one major ampullate spigot and nubbin, about 17 piriform spigots and some tartipores. PMS with large anterior spigot (minor ampullate) and 16 spigots of uneven size. Length 2.6-3.1

DISTRIBUTION. Collected at lower altitudes at Palmerson Nat. Park and the Walter Hill Range (Fig. 6).

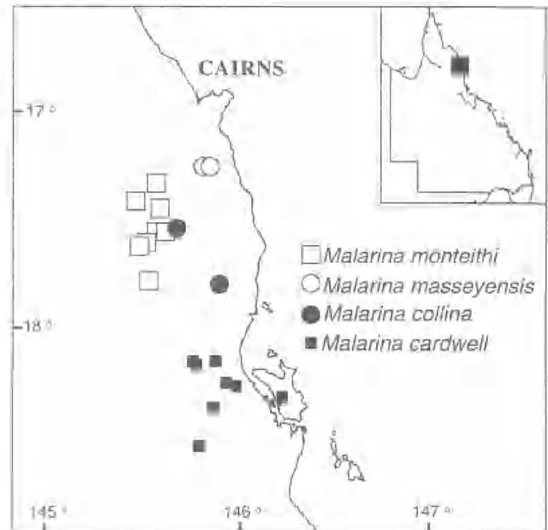


FIG. 6. Map of North Queensland showing the distribution of *Malarina* spp.

***Malarina cardwell* sp.nov.**
(Figs 4E-I, 5C-F, 6)

ETYMOLOGY. For the locality, Cardwell Range.

MATERIAL. HOLOTYPE: ♀, Mt Macalister, 18°18'S, 145°56'E, Cardwell Ra., 800-900m, 13-16 Jan. 1987, SH (QM S35266). **PARATYPES:** ♂, Mt Macalister, Cardwell Ra., 1000m, sieved litter, 20 Dec. 1986, GBM, GT (S35267); ♀, ♂, Mt Macalister, Cardwell Ra. 850m, pitfall traps 18-20 Dec. 1986, GBM, GT, SH (S39189); 3♂, 900m, pitfall trap, 18 Dec., 1986-14 Jan. 1987, (S39190); ♂, pitfall, 18 Dec. 1986-14 Jan. 1987 (S39191); 4♂, ♀, Upper Broadwater Ck, 18°19'S, 145°59'E, Cardwell Ra., 750m, pitfalls, 18 Dec. 1986-14 Jan. 1987, GBM, GT, SH (S35268); 2?, Mt Graham, 18°25'S, 145°52'E, 8km N Abergowrie, 600-700m, pitfall, 26 Dec. 1986-17 Jan. 1987, SH (S14157); ♂, ♀, Kirrama Ra., Main Rd., W side, 18°13'S, 145°47'E, 700m, pitfall traps, 10 Dec. 1986-11 Jan. 1987, GBM, GT, SH (S39192); ♀, Kirrama Ra., Mt Smoko turnoff, 18°12'S, 145°46'E, 600m (S39193); ♂, Broadwater Park, 35km NW Ingham, 18°12'S, 145°53'E, 500m, pitfall, 22 Dec. 1986-3 Jan. 1987, SH (S35271). ♂, Wallaman Falls, 18°36'S, 145°48'E, 620m, pitfalls in open forest, 5-12 Feb. 1996, GBM (S35269); ♂, Hinchinbrook I., 18°22'S, 146°13'E, 10m, sieved litter, 9 Nov. 1984, VED, GT, J. Gallon (S35270); ♂, Hinchinbrook I., Gayndah Ck, 10m, pitfalls, 8-17 Nov. 1984, VED, J. Gallon (S39194); ♀, 2♂, same data (S39195); ♂, ♀, 8-18 Nov. 1984, GBM, GT, DC (S39196).

DIAGNOSIS. Small spiders (♀'s 2.9-3.1). Insemination ducts tightly coiled presenting dark lateral spots on ventral surface (cf. all other spp.)

TABLE 4. Data matrix. Unknown characters are represented by '?', inapplicable characters by '-'.

Taxa	Character Number				
	1	10	20	30	40
<i>Wandella barbarella</i> Gray	033001010	0000000212	000-0-0000	000000000-	-00
<i>Dictynidae</i> sp.	120000010	0001001112	1010300100	0012001010	000
<i>Badumna longinqua</i> (Koch)	010000010	0000100110	0111100100	0013010010	000
<i>Paramatachia decorata</i> Dalmas	010000010	0000101120	0010100100	0013000010	001
<i>Desis</i> sp.	110000010	0000202002	1-10300100	0013010010	000
<i>Quemusia aquilonia</i> Davies	111000010	0000100110	0210100200	0013100010	000
<i>Jalkaraburra alta</i> Davies	111000010	0000102000	0-10100200	0013100010	000
<i>Amphinecta milina</i> Forster & Wilton	110000000	001010200?	0-10200100	0011010010	000
<i>Amaurobius fenestralis</i> (Stroem)	000000010	0010100110	0010100100	0011010011	000
<i>Storenosoma terranea</i> Davies	112000001	0010102001	0-10100100	0011010011	000
<i>Otira</i> sp.	112000001	0010112001	0-10100100	0011010011	000
<i>Tasmarubrius milvinus</i> (Simon)	112000000	0010102000	0-10101100	0011010111	000
<i>Procambridgea</i> sp.	100100010	0000100110	0110100100	0011000010	000
<i>Stiphidion facetum</i> Simon	011100010	0100100120	0110100100	0012000010	000
<i>Stiphidion adornatum</i> Davies	011100010	0100100120	0110300100	0012000010	000
<i>Midgee binnaburra</i> Davies	102110000	1000102001	0-10100100	0011000010	000
<i>Midgee thompsoni</i> Davies	102110000	1000102001	0-10200100	0011000010	000
<i>Dardurus spinipes</i> Davies	100100010	1000101110	0211100100	0011000010	001
<i>Manjala plana</i> Davies	110110010	1000100111	0?11100100	0013010010	000
<i>Malala lubinae</i> Davies	100010010	1000102001	0-10100100	0013000010	000
<i>Kababina alta</i> Davies	112100110	0100100110	0011100100	0011000040	000
<i>Carbinea longiscapa</i> Davies	112100110	0100102000	0-11130120	0011000040	000
<i>Carbinea breviscapa</i> Davies	112100110	0100102000	0-11110120	0011000010	000
<i>Carbinea wunderlichi</i> Davies	112100110	0100102000	0-11120120	0011000020	000
<i>Carbinea robertsi</i> Davies	112100110	0100102000	0-11120120	0011000030	000
<i>Malarina monteithi</i> sp. nov.	112100110	0100100110	0011140111	2111000010	000
<i>Malarina masseyensis</i> sp. nov.	112100110	0100100110	0011140111	0111000010	010
<i>Malarina collina</i> sp. nov.	112100110	0100100110	0011240110	2111000010	000
<i>Malarina cardwell</i> sp. nov.	112100110	0100100110	0011340110	1111000010	100

Tibial apophysis short with inturned lateral margin. (cf. other spp.)

DESCRIPTION. *Female*. CL 1.6, CW 1.2, AL 1.8, AW 1.3. Legs, I, 6.9; II, 5.5; III, 5.0; IV, 6.8. Epigynum (Fig. 4E-H) with tightly coiled insemination ducts. Spinnerets (Fig. 5C-E), ALS with two major ampullate spigots and about 17 piriform spigots. PMS with a large anterior spigot (minor ampullate) and about 12 other spigots including 2 (mesal and posterior) with larger shafts (cylindrical) and 3-4 with strobilate shafts (paracribellar). PLS with spigots of two sizes. Length 2.6-3.4.

Male. CL 1.4, CW 1.1, AL 1.5, AW 1.1. Legs, I, 6.4; II, 5.5; III, 4.8; IV, 6.4. Palp (Fig. 4I), embolic apophysis with all setae about same length; plate-like setae reduced in length. Tibial apophysis short with inturned edge (Fig. 5F). Length 2.9-3.1.

DISTRIBUTION. Collected from Kirrama/Cardwell Ra., Seaview Ra. and Hinchinbrook I. (Fig. 6).

RELATIONSHIPS OF *MALARINA*

A cladistic analysis examined 42 characters (Table 3) for relationships of the 4 *Malarina* spp and 25 other taxa. Outgroup comparison was with the Australian filistatid spider *Wandella barbarella* Gray and an undescribed Australian dictynid. A data matrix for the 29 taxa, names and authors given (Table 4), was assembled in McClade 3.01 (Maddison & Maddison, 1992).

The data was analysed in PAUP version 3.1.1. (Swofford, 1993) and replicated in Hennig 86 Version 1.5 (Farris, 1988). A heuristic search of the data with 10 random-addition sequences and TBR branch swapping generated two most parsimonious trees differing only in placement of *M. masseyensis* — either with *M. monteithi* or basal to a clade containing *M. monteithi*, *M. collina* and *M. cardwell*. The preferred tree (Fig. 7) has length 123, CI = 0.53, CI excluding uninformative characters = 0.49, RI = 0.73, RC = 0.39. Characters were mapped in CLADOS version 1.2 (Nixon, 1992) with DELTRAN optimisation.



FIG. 7. Preferred most parsimonious tree showing the cladistic relationships of some Amaurobioidea (branch support for nodes in bold type).

Branch support (Bremer, 1994) for the nodes on the preferred most parsimonious tree was calculated using Autodecay (Eriksson & Wikstrom, 1996) and is given in bold type beneath each node in Fig. 7.

CONCLUSIONS

Wandella and Dictynidae sp. appear as distinct from the ingroup which is regarded as the superfamily Amaurobioidea. Again this is composed of two clades, one including *Desis* (Desidae) and *Amphinecta* (Amphinectidae), the other including *Amaurobius* (Amaurobiidae), *Stiphidion* (Stiphidiidae) and the metaltellines *Quemusia* and *Jalkaraburra*. The Kababininae, with the addition of *Malarina* spp. continues to form a well supported monophyletic group (Davies, 1999).

The families at the base of the clade are paraphyletic therefore the placing of Kababininae within any of the existing families remains problematic. The group appears to be closest to the Stiphidiidae but this is based on a single character (feathery hairs) which is also found in other genera not represented here.

While the Kababininae is well supported as is the Stiphidiidae, the other families are either paraphyletic (eg. Desidae as presently constituted) or poorly supported. Support for placing the Kababininae within the Stiphidiidae is low. Further descriptions and cladistic analyses of the Amaurobioidea are necessary to determine family relationships and placement of genera.

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